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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,843	07/08/2003	William Cole	P01029US2A(FIR.334)	9146

7590 07/15/2005

Chief Intellectual Property Counsel
Bridgestone/Firestone Americas Holding, Inc.
1200 Firestone Parkway
Akron, OH 44317-0001

EXAMINER

CHOI, LING SIU

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/614,843

Applicant(s)

COLE, WILLIAM

Examiner

Ling-Siu Choi

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04/06/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Amendment filed March 31, 2005. Claims 5-6 have been added and claims 1-6 are now pending. Claim rejections under 35 U.S.C. 103(a) as being unpatentable over Moller (WO 96/01304) in view of Benoit et al. (US 6,087,003) are maintained.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention. The citation "removing the polymer cement from the polymerization reactor, wherein the polymer **cement has a polymerization temperature above ambient temperature** due to the heat of polymerization" lacks of support from the Specification.

4. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one

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skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention. The recitation “pressurizing and heating the reaction mixture **in the polymerization reactor**” lacks of support from the Specification.

5. Claims 2 and 6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention. Claim 2 is amended to cite the process to determine the critical conditions by stating “(a)(i) mixing hydrogen.....; and (b) (i)” Such limitation is not supported by the Specification. See lines 4-29 of page 7 and lines 18-28 of page 9. It appears that **either (a) or (b)** is used to determine the critical conditions but not both. The same argument is applied to new claim 6.

6. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, the statement “adding the polymer cement removed from the polymerization reactor into a **hydrogenation reactor**” on lines 9-10 and the statement “pressurizing and heating the reaction mixture in the **polymerization reactor** such that

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the contents of the reaction mixture exist in the supercritical phase" on lines 13-14 cause indefiniteness because it is not understood whether the hydrogenation is carried out in the hydrogenation reactor or in the polymerization reactor.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moller (WO 96/01304) in view of Benoit et al. (US 6,087,003).

Moller discloses a process to hydrogenate a polymer, comprising (a) bringing a mixture of solvent, substrate, hydrogen, and reaction product to a supercritical state to achieve a substantially homogeneous solution and (b) contacting the resulting substantially homogeneous solution wherein the substrate is a lipid (abstract; claim 1).

The difference between the present claims and the disclosure of Moller is the requirement of a polymer to be used as the substrate in the present claims.

Benoit et al. disclose a method to deposit a coating material dissolved in a supercritical fluid, wherein the coating material can be lipid, natural polymer, or synthetic organic polymer (abstract; col.4, lines 45-67; col.5, lines 1-4). A conclusion can be

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drawn that the use of a lipid is equivalent to or exchangeable with the use of a polymer in the supercritical fluid. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the process disclosed by Moller to a polymer because of the expected success resulted from the equivalence and exchange of a lipid and a polymer in the supercritical process and thereby obtain the present invention.

Response to the Amendment

10. Applicant's arguments filed on June 13, 2005 have been fully considered but they are not persuasive.

Applicants: "Because polymer cement is already hot due to the heat of polymerization, less heat must be added to the system at the hydrogenation reactor to reach supercritical conditions....The cited art does not teach or suggest polymerizing monomer in a polymerization reactor and beneficially taking advantage of the heat of polymerization, as currently claimed."

In view of the limitation "removing the polymer cement from the polymerization reactor, wherein the polymer cement has a polymerization temperature above ambient temperature due to the heat of polymerization; adding the polymer cement removed from the polymerization reactor into a hydrogenation reactor" (claim 1, lines 6-12), it does not necessarily indicate that the temperature for the polymer cement removed from the polymerization reactor into a hydrogenation reactor still maintain the same

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polymerization temperature. Thus, such citation is not considered as a limitation.

Allowable Subject Matter

11. This application contains allowable subject matter [claims 2] because the prior art of record [Moller (WO 96/01304) and Benoit et al. (US 6,087,003)], either alone or in combination, fails to teach or suggest the use of the particularly claimed process. If the **non-elected claim is canceled** and the hereinabove rejections under 35 USC 112 are obviated, the application could be passed to issue.

12. Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

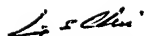
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.



LING-SUI CHOI
PRIMARY EXAMINER

July 5, 2005